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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/659,213

09/10/2003

Katsuhiko Miya

P/1250-261

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EXAMINER

HECKERT, JASON MARK

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/659,213

Applicant(s)

MIYA ET AL.

Examiner

Jason Heckert

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 26 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-36 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13, 15-22, 24-31 and 33-36 is/are rejected.
- 7) ☒ Claim(s) 5, 14, 23 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see lines 5-10, filed 11/24/06, with respect to claims 1-36 have been fully considered and are persuasive. The rejection under 35 U.S.C. 112 of claims 1-36 has been withdrawn. Claims 8-9, 17-18, 26-27, 35-36 were not indicated allowable due to the fact that they were rejected under 35 U.S.C. 112 and were worded in such a way that was very confusing.

2. Applicant's arguments, see pages 16-18, filed 11/24/06, with respect to the rejection(s) of claim(s) 1-4 under 35 U.S.C. 102(b), claim(s) 19-20 under 35 U.S.C. 102(e), and claim(s) 2-7, 10-16, 21-25, 28-29, 30-34 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of applicant's amendments and newly found prior art.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 13, 16 recite the limitation "said first processing liquid guide part." There is insufficient antecedent basis for this limitation in the claim. Please revise said claims with the term "pure water guide part" as in amended claim 10.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1-4, 10, 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. and further in view of Japanese Patent Application Laid-Open No. 11-87294 ('294). Sumnitch discloses the components of a substrate processing apparatus comprising a substrate holding part 10, a rotary part 7, a liquid supply 42 with conduits 44 and 45, a plurality of guide parts 36-38, a plurality of guide passages 39-41, a position adjusting part as indicated by 22, wherein the multiple guide/recovery parts are stacked. Sumnitch also discloses that the processing liquids can consist of a rinse agent, such as water, and chemical agents, such as acids. These features are not exclusive to Sumnitch and are well known in the art. '294 is an example of another substrate processing apparatus that has similar components. Sumnitch does not disclose the distinct structure of the guide parts of the claimed invention. Liquid guide parts are well known in the art to capture the liquid flying from the substrate. It would be obvious to implement any of the many known styles of guide part since they are functional equivalents. Shinbara et al. discloses a guide part wherein there is a first cylindrical part arranged coaxially with a substrate holding part, an inclined part extending obliquely downwardly toward said substrate holding part, and a second cylindrical part extending vertically downwardly from the lower end of said inclined part,

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wherein an internal diameter of said first cylindrical part is greater than the internal diameter of the second cylindrical part. Hence, the style of guide part disclosed in claim 1 and 10 is known. Furthermore '294 discloses the use of a guide part that extends obliquely upward toward the substrate holder as well as liquid guide passages formed between adjacent guide parts. It is clear in the design of '294, because the space between the respective guide parts and substrate holding part does *not* get smaller, the problem of polluting particles caused by bounce would not occur. It would have been obvious, at the time of the invention to modify Sumnitch, and include multiple guide parts of the style Shinbara et al. discloses in place of the multiple guide parts of Sumnitch. Furthermore, it would be obvious to include an additional guide part extending obliquely upward in the direction of the substrate holder to prevent splashing, as disclosed by '294, and further orient the guide/recovery parts in a way so that a liquid passage is formed in between the adjacent guide parts to create a more compact recycle system.

7. In regards to claim 3-4 and 12- 13, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding waste material from the first recovery tank. Neither Sumnitch, Shinbara et al., nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

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8. Claims 6-9, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore, flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

9. Claims 19-20, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 and further and further in view of Ono et al. As stated previously, Sumnitch discloses many of the features common to substrate processing apparatuses throughout the art. However, he does not disclose a four stage splash guard or a lifting mechanism. Ono et al. discloses a four stage splash guard 3 that can be raised or lowered. This feature is not exclusive to Ono et al., and can be found throughout the art. It would have been obvious to modify Sumnitch in view of Shinbara et al. and '294, as stated above and further include a fourth guard and mobilize the guards in a vertical direction, as disclosed by Ono et al., in order to allow

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for the introduction of a fourth fluid and allow for simple interchangeability of the guide parts.

10. In regards to claim 21-22 and 30- 31, '294 clearly shows annular first recovery tanks and a plurality of pipes leaving the tanks. Sumnitch discloses annular first recovery tanks connected to storage tanks as well as a discharge pipe 48 discarding waste material from the first recovery tank. Neither Sumnitch, Shinbara et al., nor '294 disclose annular storage tanks. Changes in shape or form have been held to be obvious. *In re Dailey* 149 USPQ 47, 50 (CCPA 1966). Sumnitch discloses the use of a storage tank. A mere change in the shape of the storage tank cannot be considered patentable, as the storage tank still performs the intended function of storing material.

11. Claims 24-27 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumnitch in view of Shinbara et al. in view of '294 in view of Ono et al. and further in view of Miya et al. None of the above references teach a discharge nozzle shooting water in the vicinity of the substrate holder. Miya et al., disclose a substrate treating apparatus that has nozzles 52 for shooting solution (rinse or chemical) in the vicinity of the substrate holder. In order to deliver such solution, the nozzle must be in fluid connection with a liquid source via some sort of piping or liquid passage. Furthermore, flexible piping is notoriously well known in the art. Miya et al. disclose the device in order to spray solution at the back of the wafer, yet the device is fully capable of delivering solution to a rotary chuck that does not have holes for cleaning purposes. It would have been obvious at the time of the invention, to modify

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Sumnitch as stated above, and further include a nozzle, as disclosed by Miya et al., to shoot water in the vicinity of the substrate holder.

***Allowable Subject Matter***


12. Claim 5, 14, 23, 32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. When stacked vertically in the apparatus, doughnut-shaped storage tanks are a compact design is not obvious over the prior art.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

JMH

  
**MICHAEL BARR**  
SUPERVISORY PATENT EXAMINER